

Mail

m/027/007

Facsimile Cover Sheet

FAXED
1-4-97
12:30 PM

DATE:

January 6, 1997

TO:	D. Wayne Hedberg, Deputy Director
COMPANY:	State of Utah, Dept. of Natural Resources
	Utah Div. of Oil, Gas & Mining
	1594 West North Temple - Suite 1210
	Salt Lake City, UT 84114-5801
FAX NUMBER:	801-359-3940
PHONE NUMBER:	801-538-5340

FROM:	E. B KING
COMPANY:	JUMBO MINING COMPANY
FAX #:	512-346-3188
PHONE:	512346-4537

Attached is a copy of a letter sent this date to Mr. Ostler.

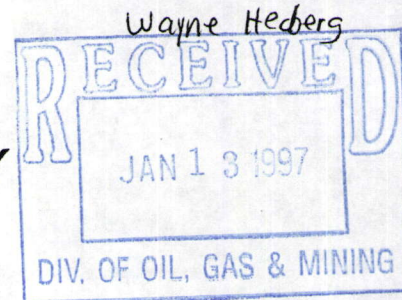
JUMBO MINING COMPANY

6305 Fern Spring Cove

Austin, Texas 78730

512-346-4537 (Ph.)

512-346-3188 (Fax)



January 6, 1997

File: DWQ12116

Mr. Don A. Ostler
Director
Division of Water Quality
Department of Environmental Quality
288 North, 1460 West
P. O. Box 114870
Salt Lake City, Utah 84114-4570

Phone: 801-538-6146

Fax: 801-538-6016

Re: Response to your letter dated December 6, 1996

We have delayed answering referenced letter so that we might include in our response the analyses obtained by both parties on the samples of drainage taken from No.1 heap on November 26, 1996 by your representative, Richard Denton. The results from DWQ were received by fax on December 31, 1996 and are included herewith.

With respect to your first paragraph I would like to note that the "evidence of discharges of process water from the leach pads in the past" must be referring to events occurring prior to 1989, when Jumbo took over this property. We are not aware of any such discharges of "process waters" in 1989 and 1990 while Jumbo was processing these heaps. All drainages from the heaps during this period were contained in the leachate collection system. After the heaps were rinsed before shutdown in October of 1990, the leachate collection system was no longer maintained, since there was no reason to do so.

Second, with respect to "the possibility that the pads in their current state may be causing an ongoing discharge of contaminants...", we believe that we have submitted abundant evidence to the contrary. This evidence consists of repeated analyses from the monitoring holes which sample the perched zone of saturation which underlies most of the heaps, as well as samples of drainage from the heaps themselves.

On Friday, November 22, 1996 Mark Novak called me to advise that it was raining a lot in the Drum area and that your agency would like to send Richard Denton to the Drum Mine to sample the run off from the heaps. I responded that although Dave Hartshorn was out of the State, your representative would be welcomed by our watchman at any time. Unfortunately, I understand that by the time Mr. Denton came on the property, four days later, nearly all of the drainage had ceased, and only of one of the many available sampling points actually had any drainage. The results of analyses of the two splits of this

sample are shown in the table attached hereto for comparison with our most recent prior sampling, on September 18, 1996, which has been previously reported to you.

It is evident from these most recent results that this "last gasp" drainage, four days after the rains had ceased, contained about double the concentration of salts, as compared to samples taken September 18th, two days after the rain had ceased (see TDS, chlorides, nitrates, etc.). The volume of flow, represented by this sample, was so small that it took 10 to 15 minutes to fill the pint sized sample container, e.g. approximately 0.0189 gpm!

The low concentration of WAD cyanide reported in these samples again confirms that there is no significant discharge of contaminants. Further, the calculated mass rate of discharge of WAD cyanide contained in these two samples is truly negligible (0.0005 lbs per day on September 18th, and 0.00005 lbs per day on November 26th). This also applies to all other impurities reported, including salt and nitrates, both of which are high regionally.

Thus, we contend that the amount of contaminants which might possibly be added to the environment (we have submitted evidence that there is no useable quantity of "ground water" anywhere in the vicinity) is truly negligible.

Furthermore, considering the dilution factor of the very much larger volumes of water used during final rinsing in 1990 (wherein drainages volumes were in the hundreds of gallons per minute as compared to the fractions of a gallon per minute resulting from rain storms) the evidence submitted here substantiates the fact that the heaps more than met the requirements of our permit conditions for final rinsing, before they were shut down in October, 1990.

With respect to the persistence of traces of cyanide in these solutions, six years after any cyanide has been added to these heaps, we believe that this is readily explained by the known presence of gold in these heaps, which forms an unusually strong complex with cyanide. This strong chemical bond prevents normal dissipation of cyanide by bacterial action or volatilization. It is our plan to eventually reprocess these heaps to recover this gold content. Meanwhile, all samples taken of the drainage show levels of WAD cyanide close to or below drinking water standards, even in the low volume, concentrated "last gasp" drainages.

In conclusion, we believe that this most recent sampling by your Agency provides further verification that there is no significant ground water pollution occurring from drainage from the heaps. Accordingly, there is no reason now, nor has there been in the past, to be concerned about the lack of maintenance since 1990 of the leachate collection system from the heaps. We have previously explained to you that the heaps were rinsed before shut down in October, 1990, as provided by and described in our permit correspondence on the subject, and that thereafter there was no purpose in attempting to maintain these ditches.

Rest assured that we will welcome your representative to take additional samples at any point of your choosing from any of the drainage areas around the heaps which might

Letter To Mr. Ostler
January 6, 1997
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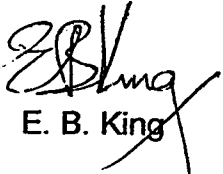
provide samples shortly after a heavy rain. While we will be glad to suggest a few points, depending on the amount of rainfall and the delay time after rain ceases, many of these may have dried up by the time your representative from Salt Lake City reaches the location. Should the State or BLM require additional sampling in the future, we would suggest that the BLM representative, Sheri Wysong, who lives in Delta, be delegated to perform the sampling. She should be able to respond more quickly after the infrequent rain storms, and thus be able to obtain samples from more of the heaps.

During the recent visit by officials of DOGM and BLM to the property on January 3, 1997, an additional sample of drainage was taken by Tom Munson and Mary Ann Wright. The results of analyses on this sample should be available in approximately 10 days.

On the question of permitting of our new heap, your Division has advised us of a 30 day delay in reviewing our final engineering plans. We would appreciate any possible assistance in helping us receive final approval of these plans.

Please let me know if I can be of further assistance on either of these matters.

Sincerely,


E. B. King

cc: DHartshorn
ZLSamay, Esq.
Rex Rowley, BLM, Filmore
Wayne Hedberg, DOGM
Roger Foisy, District Engineer

**ANALYTICAL RESULTS OF HEAP RUNOFF AFTER A
RAINSTORM DRAINAGE FROM HEAPS 1, 2, AND 4/5
AT THE DRUM MINE**

Sampled September 18, & November 26, 1996

	18-Sep			26-Nov	26-Nov	DRINKING WATER STANDARD
	HEAP 1	HEAP 2	HEAP 4/5	AWAL	DWQ	
mg/l	HEAP 1	HEAP 2	HEAP 4/5	HEAP 1		
As	0.040	0.031	0.035	0.024	0.040	0.050
Cd	<0.004	<0.004	0.004	<0.004	<0.001	0.010
Cr	<0.010	<0.010	0.010	<0.010	0.015	0.050
Pb	<0.050	<0.050	<0.050	<0.050	<0.003	0.050
Hg	<0.001	<0.001	<0.001	<0.001	<0.0002	0.002
Chloride	1,900	1,200	2,700	4,100	4,430	250
Total CN	0.360	0.220	0.220	1.000	2.000	NA
WAD CN	0.140	0.048	0.052	0.240	0.200	0.200
Nitrate	67	45	86	160	209	10
TDS	4,900	3,100	6,700	9,500	10,566	2,000
pH				8.4	8.7	

COMMENTS:

1. September 18th samples were collected from heap runoff two days after a major rainstorm. Only heaps 1,2, and 4/5 had runoff from drainage from the interior of the heaps. No.1 drainage was 0.3 gpm. All other heaps absorbed the rainfall and no runoff occurred.
2. November 26th sample was collected from No. 1 Heap, four or five days after rainfall ceased. There was no flow from other heaps. Flow rate from No.1 was estimated at 0.019 gpm.
3. During and after the rainfall, no leak detection pipes from beneath heaps showed any flow, which indicates no leaks occurred through the liner.
4. The runoffs represented the final draindown of the heaps after a major rainstorm.
5. AWAL = American West Analytical Laboratories results on JMC sample split of Nov. 26th sampling by DWQ.
6. DWQ = DWQ results reported by fax 12/31/96 for sample taken Nov.26th.

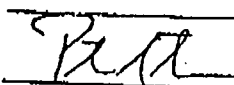
*To ED KING***INORGANIC ANALYSIS REPORT****AMERICAN
WEST
ANALYTICAL
LABORATORIES****Client:** Jumbo Mining
Date Sampled: November 26, 1996
Lab Sample ID.: 27838-01
Field Sample ID.: Drum Mtn. Utah/H-1**Contact:** Dave Hartshorn
Date Received: November 26, 1996
Received By: Andrea Greenwood
Set Description: One Water Sample**Analytical Results**

		Method Used:	Reporting Limit: mg/L	Amount Detected: mg/L
463 West 3600 South Salt Lake City, Utah 84115 (801) 263-8686 Toll Free (888) 263-8686 Fax (801) 263-8687	TOTAL METALS			
	Arsenic	7060	0.005	0.024
	Cadmium	6010	0.004	<0.004
	Chromium	6010	0.01	<0.01
	Lead	6010	0.05	<0.05
	Mercury	7470	0.001	<0.001

OTHER CHEMISTRIES

Chloride	4500 CLB	0.5	4,100.
Cyanide	335.3	0.005	1.0
Cyanide-WAD	335.3	0.005	0.24
Nitrate (as N)	353.2	0.01	160.
pH	150.1	0.1	8.4
TDS	160.1	1.0	9,500.

Released by:


Laboratory Supervisor

12/31/96 15:08

Division of Water Quality

1996 Lab Analysis Report

ADH Page: 29

Storet No:
 Sample Source:
 Description: DRUM MINE LEACH PAD SITE
 Lab Code: C
 Lab Number: 9610913
 Sample Date: November 26, 1996
 Sample Time: 1038
 Sample Type: 04

Post-it* Fax Note 7671		Date 12/31	# of pages 1
To Ed King	From Arue		
Co/Dept Drum Mine	Co. DEQ/DWQ		
Phone # 801-868-4697	Phone # 801-538-6068		
Fax # 512-346-3188	Fax # 601-538-6016		

Comment: PH pH should be performed as a field test.

Field Tests

Field Temperature, C	1.7	pH, units	8.7
D.O., mg/l	9.9	Sp. Cond., umhos/cm	6648

Laboratory Analyses

T. Sus. Solids, mg/l	4.4	Cyanide, mg/l	2.01
D-Arsenic, ug/l	40.0	D-Barium, ug/l	65.0
D-Cadmium, ug/l	<1.0	D-Calcium, mg/l	79.3
D-Chromium, ug/l	14.5	D-Copper, ug/l	44.5
Iron, Diss., ug/l	226.0	D-Lead, ug/l	<3.0
D-Magnesium, mg/l	38.3	D-Manganese, ug/l	<5.0
D-Potassium, mg/l	14.7	D-Selenium, ug/l	33.5
D-Silver, ug/l	<2.0	D-Sodium, mg/l	3660.0
D-Zinc, ug/l	<30.0	Bicarbonate, mg/l	316
Carbon Dioxide, mg/l	1	Carbonate, mg/l	0
Chloride, mg/l	4430.0	Hydroxide, mg/l	0
Sulfate, mg/l	1918.5	T. Alk/CaCO ₃ , mg/l	259
T. Hdns/CaCO ₃ , mg/l	355.4	Turbidity, NTU	1.98
Sp. Cond. umhos/cm.	15620	TDS @ 180 C, mg/l	10566
D-Aluminum, ug/l	<30.0	NO ₂ +NO ₃ Diss	209.67
D-Mercury, ug/l	<0.2	CO ₃ Solids	155
Cyanide H+, mg/l	0.2	Dis. Tot. Phos. mg/l	0.09057